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(FILE 'HOME' ENTERED AT 17:50:40 ON 22 AUG 2001)

FILE 'HCAPLUS' ENTERED AT 17:51:08 ON 22 AUG 2001

L1 12118 S CORYNEFORM BACTERIA OR (BACTERIA (L) CORYNEFORM) OR CORYNEBAC  
L2 328 S (ARGININE (A) REPRESSOR) OR (REPRESSOR# (L) ARGININE) OR ARGR  
L3 4 S L1 AND L2

FILE 'HCAPLUS' ENTERED AT 17:53:17 ON 22 AUG 2001

FILE 'REGISTRY' ENTERED AT 17:53:52 ON 22 AUG 2001  
L4 1 S 74-79-3 /RN

FILE 'HCAPLUS' ENTERED AT 17:54:00 ON 22 AUG 2001

FILE 'REGISTRY' ENTERED AT 17:54:13 ON 22 AUG 2001

L5 SET SMARTSELECT ON  
SEL L4 1- CHEM : 14 TERMS  
SET SMARTSELECT OFF

FILE 'HCAPLUS' ENTERED AT 17:54:14 ON 22 AUG 2001

L6 88184 S L5  
L7 1951 S L6 (L) PREP/RL  
L8 62 S L1 (L) L7  
L9 0 S L8 (L) L2  
L10 0 S L8 AND L2  
L11 2 S L7 (L) L2

=> d iall 1-2

L11 ANSWER 1 OF 2 HCPLUS COPYRIGHT 2001 ACS  
ACCESSION NUMBER: 1999:376237 HCPLUS  
DOCUMENT NUMBER: 131:210482  
TITLE: Probing Activation of the Prokaryotic Arginine  
Transcriptional Regulator Using Chimeric Proteins  
Holtham, Carol A. M.; Jumel, Kornelia; Miller, Coleen  
M.; Harding, Stephen E.; Baumberg, Simon; Stockley,  
Peter G.  
CORPORATE SOURCE: University of Leeds, Leeds, LS2 9JT, UK  
SOURCE: J. Mol. Biol. (1999), 289(4), 707-727  
CODEN: JMOBAK; ISSN: 0022-2836  
PUBLISHER: Academic Press  
DOCUMENT TYPE: Journal  
LANGUAGE: English  
CLASSIFICATION: 6-1 (General Biochemistry)  
Section cross-reference(s): 10

**ABSTRACT:**  
The major transcription factors controlling arginine metab. in *Escherichia coli* and *Bacillus subtilis*, ArgR and AhrC, resp., are homologous multimeric proteins that form L-arginine-dependent DNA-binding complexes capable of repressing transcription of the biosynthetic genes (both), activating transcription of catabolic genes (AhrC only) or facilitating plasmid dimer resoln. (both). Multimerization and L-arginine binding are assocd. with the C-terminal 70-80 residues; the N-terminal regions contain a winged helix-turn-helix DNA-binding domain. We have constructed chimeric genes in which the sequences for the N- and C-terminal domains have been swapped. The resultant chimeric proteins and their corresponding native proteins have been analyzed for their ability to form multimers and bind DNA operator sites in an L-arginine-dependent fashion. Gel filtration and equil. sedimentation anal. are consistent with the formation of hexamers by all four proteins in the presence of L-arginine and at high protein concns. (>100 nM monomer). The hexamer sedimentation coeffs. suggest that there is a redn. in mol. vol. upon binding L-arginine, consistent with a conformational change accompanying an allosteric activation of DNA-binding. In the absence of L-arginine or at lower protein concns., the hexamers are clearly in rapid equil. with smaller subunits, whose dominant species appear to be based on trimers, as expected from the crystal structure of the ArgR C-terminal fragment, with the exception of the ArgR-C chimera, which apparently dissocs. into dimers, suggesting that in the intact protein the DNA-binding domains may have a significant dimeric interaction. The hexamer-trimer Kd is in the micromolar range, suggesting that trimers are the principal species at in vivo concns. DNA binding by all four proteins has been probed by gel retardation and DNase I footprinting anal. using all three types of naturally occurring operators: biosynthetic sites encompassing two 18 bp ARG boxes sep'd. by 2 bp; biosynthetic sites contg. two such boxes and a third 18 bp ARG box at a distance of 100 bp downstream, i.e. within the structural gene; and finally a catabolic operator which contains a single ARG box site. The data show that all four proteins bind to the operators at the expected regions in an L-arginine-dependent fashion. From the apparent affinities of the chimeras for each target site, there is no obvious sequence-specificity assocd. with the N-terminal domains; rather the data can be interpreted in terms of differential allosteric activation, including DNA binding in the absence of L-arginine. Remarkably, the proteins show apparent "anti-competition" in the presence of excess, specific DNA fragments in gel retardation. This appears to be due to assembly of an activated form of the protein, probably hexamers, on the operator DNA. The data are discussed in terms of the current models for the mode of action of both native proteins. (c) 1999 Academic Press.

SUPPL. TERM: arginine transcription factor chimera operator  
INDEX TERM: Fusion proteins (chimeric proteins)  
Transcription factors  
ROLE: BAC (Biological activity or effector, except adverse);  
BPN (Biosynthetic preparation); BIOL (Biological study);

PREP (Preparation)  
(ArgR and AhrC; probing activation of prokaryotic arginine transcriptional regulator using chimeric proteins)

INDEX TERM: Genetic element  
ROLE: BPR (Biological process); BIOL (Biological study);  
PROC (Process)  
(operator; probing activation of prokaryotic arginine transcriptional regulator using chimeric proteins)

INDEX TERM: Molecular recognition  
(probing activation of prokaryotic arginine transcriptional regulator using chimeric proteins)

INDEX TERM: Quaternary structure  
(protein; probing activation of prokaryotic arginine transcriptional regulator using chimeric proteins)

INDEX TERM: 74-79-3, L-Arginine, biological studies  
ROLE: BAC (Biological activity or effector, except adverse);  
BIOL (Biological study)  
(probing activation of prokaryotic arginine transcriptional regulator using chimeric proteins)

REFERENCE COUNT: 39

REFERENCE(S):  
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HCPLUS  
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HCPLUS  
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HCAPLUS

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L11 ANSWER 2 OF 2 HCAPLUS COPYRIGHT 2001 ACS  
 ACCESSION NUMBER: 1997:591225 HCAPLUS  
 DOCUMENT NUMBER: 127:244501  
 TITLE: Purification and characterization of an arginine regulatory protein, ArgR, from *Pseudomonas aeruginosa* and its interactions with the control regions for the car, argF, and aru operons  
 AUTHOR(S): Park, Seung-Moon; Lu, Chung-Dar; Abdelal, Ahmed T.  
 CORPORATE SOURCE: Department Biology, Georgia State University, Atlanta, GA, 30303, USA  
 SOURCE: J. Bacteriol. (1997), 179(17), 5309-5317  
 CODEN: JOBAAY; ISSN: 0021-9193  
 PUBLISHER: American Society for Microbiology  
 DOCUMENT TYPE: Journal  
 LANGUAGE: English  
 CLASSIFICATION: 6-3 (General Biochemistry)  
 Section cross-reference(s): 3

**ABSTRACT:**  
*Pseudomonas aeruginosa* ArgR, a regulatory protein that plays a major role in the control of certain biosynthetic and catabolic arginine genes, was purified to homogeneity. ArgR was shown to be a dimer of two equal subunits, each with a mol. mass of 37,000 Da. Detn. of the N-terminal amino acid sequence showed it to be identical to that predicted from the derived sequence for the argR gene. DNase I footprinting showed that ArgR protects a region of 45 to 47 bp that overlaps the promoters for the biosynthetic car and argF operons, indicating that ArgR exerts its neg. control on the expression of these operons by steric hindrance. Studies were also carried out with the aru operon, which encodes enzymes of the catabolic arginine succinyl-transferase pathway. Quant. S1 nuclease expts. showed that expression of the first gene in this operon, aruC, is initiated from an arginine-inducible promoter. Studies with an aruC-lacZ fusion showed that this promoter is under the control of ArgR. DNase I expts. indicated that ArgR protects two 45-bp binding sites upstream of aruC; the 3' terminus for the downstream binding site overlaps the -35 region for the identified promoter. Gel retardation expts. yielded apparent dissocn. consts. of 2.5.times.10-11, 4.2.times.10-12, and 7.2.times.10-11 M for carA, argF, and aruC operators, resp. Premethylation interference and depurination expts. with the car and argF operators identified a common sequence, 5'-TGTGCG-3', which may be important for ArgR binding. Alignment of ArgR-binding sites reveals that the ArgR-binding site consists of two half-sites, in a direct repeat arrangement, with the consensus sequence TGTGCGN8AAN5.

SUPPL. TERM: arginine repressor protein ArgR *Pseudomonas*  
 INDEX TERM: Operons  
 (argF, aru, and car; purifn. and characterization of an arginine regulatory protein, ArgR, from *Pseudomonas aeruginosa* and its interactions with the control regions for the car, argF, and aru operons)  
 INDEX TERM: Transcription factors  
 ROLE: BAC (Biological activity or effector, except adverse);  
 PUR (Purification or recovery); BIOL (Biological study);  
**PREP (Preparation)**  
 (gene argR; purifn. and characterization of an arginine regulatory protein, ArgR, from *Pseudomonas aeruginosa* and its interactions with the

control regions for the car, argF, and aru operons)  
INDEX TERM: DNA sequences  
                  (of ArgR repressor binding sites in Pseudomonas aeruginosa car, argF, and aru operons)  
INDEX TERM: Pseudomonas aeruginosa  
                  (purifn. and characterization of an arginine regulatory protein, ArgR, from Pseudomonas aeruginosa and its interactions with the control regions for the car, argF, and aru operons)  
INDEX TERM: Operator (genetic element)  
ROLE: BPR (Biological process); BIOL (Biological study);  
PROC (Process)  
                  (purifn. and characterization of an arginine regulatory protein, ArgR, from Pseudomonas aeruginosa and its interactions with the control regions for the car, argF, and aru operons)  
INDEX TERM: 74-79-3, Arginine, biological studies  
ROLE: BSU (Biological study, unclassified); BIOL (Biological study)  
                  (catabolic genes for; purifn. and characterization of an arginine regulatory protein, ArgR, from Pseudomonas aeruginosa and its interactions with the control regions for the car, argF, and aru operons)

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(FILE 'HOME' ENTERED AT 16:06:30 ON 22 AUG 2001)

FILE 'HCAPLUS' ENTERED AT 16:09:39 ON 22 AUG 2001

L1 787 S CORYNEFORM BACTERIA OR BACTERIA (L) CORYNEFORM  
L2 58 S ARGININE (A) REPRESSOR  
L3 0 S L1 (L) L2  
L4 0 S L1 AND L2  
E CORYNEFORM BACTERIA  
E CORYNEFORM BACTERIA/CT  
E E3+ALL  
E ARGININE/CT

FILE 'REGISTRY' ENTERED AT 16:11:19 ON 22 AUG 2001

L5 0 S L ARGININE/CN  
L6 2 S ARGININE/CN

FILE 'HCAPLUS' ENTERED AT 16:13:51 ON 22 AUG 2001

FILE 'REGISTRY' ENTERED AT 16:15:06 ON 22 AUG 2001

FILE 'HCAPLUS' ENTERED AT 16:15:13 ON 22 AUG 2001

E REPRESSOR/CT  
E REPRESSORS (L) ARGININE/CT  
L7 204 S ARGININE (A) REPRESSOR OR (REPRESSOR# (L) ARGININE)  
L8 0 S L7 (L) L1

FILE 'CROPU, DGENE, DPCI, ENCOMPPAT, ENCOMPPAT2, EUROPATFULL, HCAOLD, HCAPLUS, IFIPAT, INPADOC, JAPIO, PAPERCHEM2, PATDD, PATDPA, PATOSDE, PATOSEP, PATOSWO, PCTFULL, PIRA, RAPRA, SYNTHLINE, TULSA, TULSA2, USPATFULL, WPIDS' ENTERED AT 16:16:36 ON 22 AUG 2001

L9 27 S L1 (L) L7  
L10 27 DUP REM L9 (0 DUPLICATES REMOVED)  
L11 20 S L10 AND PY<=2000  
L12 19 S L11 AND (DISRUPT? OR MUTAT? OR INACTIV?)

FILE 'REGISTRY' ENTERED AT 16:44:53 ON 22 AUG 2001

L13 1 S 74-79-3 /RN

FILE 'CROPU, DGENE, DPCI, ENCOMPPAT, ENCOMPPAT2, EUROPATFULL, HCAOLD, HCAPLUS, IFIPAT, INPADOC, JAPIO, PAPERCHEM2, PATDD, PATDPA, PATOSDE, PATOSEP, PATOSWO, PCTFULL, PIRA, RAPRA, SYNTHLINE, TULSA, TULSA2, USPATFULL, WPIDS' ENTERED AT 16:45:06 ON 22 AUG 2001

FILE 'REGISTRY' ENTERED AT 16:45:16 ON 22 AUG 2001  
SET SMARTSELECT ON  
L14 SEL L13 1- CHEM : 14 TERMS  
SET SMARTSELECT OFF

FILE 'CROPU, DGENE, DPCI, ENCOMPPAT, ENCOMPPAT2, EUROPATFULL, HCAOLD, HCAPLUS, IFIPAT, INPADOC, JAPIO, PAPERCHEM2, PATDD, PATDPA, PATOSDE, PATOSEP, PATOSWO, PCTFULL, PIRA, RAPRA, SYNTHLINE, TULSA, TULSA2, USPATFULL, WPIDS' ENTERED AT 16:45:19 ON 22 AUG 2001

FILE 'REGISTRY' ENTERED AT 16:50:08 ON 22 AUG 2001  
SET SMARTSELECT ON  
L15 SEL L13 1- CHEM : 14 TERMS  
SET SMARTSELECT OFF

FILE 'CROPU, DGENE, DPCI, ENCOMPPAT, ENCOMPPAT2, EUROPATFULL, HCAOLD, HCAPLUS, IFIPAT, INPADOC, JAPIO, PAPERCHEM2, PATDD, PATDPA, PATOSDE, PATOSEP, PATOSWO, PCTFULL, PIRA, RAPRA, SYNTHLINE, TULSA, TULSA2, USPATFULL, WPIDS' ENTERED AT 16:50:10 ON 22 AUG 2001

L16 151137 S L15  
L17 19 S L16 (L) L12  
L18 19 DUP REM L17 (0 DUPLICATES REMOVED)  
L19 19 S L18 AND (PREP? OR MAK? OR SYNTH? OR MANUFACT? OR PRODU?)  
L20 1 S L19 AND ((DISRUPT? OR MUTAT? OR INACTIV?) (S) (ARGININE (A))

=> d 119 ibib ab 1-19

L19 ANSWER 1 OF 19 EUROPATFULL COPYRIGHT 2001 WILA

PATENT APPLICATION - PATENTANMELDUNG - DEMANDE DE BREVET

ACCESSION NUMBER: 999267 EUROPATFULL EW 200019 FS OS

TITLE: Method for **producing L-arginine**.

Verfahren zur Herstellung von L-arginin.

Procede pour la **preparation de L-arginine**.

INVENTOR(S): Suga, Mikiko, Ajinomoto Co., Inc., 1-1 Suzuki-cho, Kawasaki-ku, Kawasaki-shi, Kanagawa, JP; Kuwabara, Yoko, Ajinomoto Co., Inc., 1-1 Suzuki-cho, Kawasaki-ku, Kawasaki-shi, Kanagawa, JP; Hashiguchi, Kenichi, Ajinomoto Co., Inc., 1-1 Suzuki-cho, Kawasaki-ku, Kawasaki-shi, Kanagawa, JP; Ito, Hisao, Ajinomoto Co., Inc., 1-1 Suzuki-cho, Kawasaki-ku, Kawasaki-shi, Kanagawa, JP; Nakamatsu, Tsuyoshi, Ajinomoto Co., Inc., 1-1 Suzuki-cho, Kawasaki-ku, Kawasaki-shi, Kanagawa, JP; Kurahashi, Osamu, Ajinomoto Co., Inc., 1-1 Suzuki-cho, Kawasaki-ku, Kawasaki-shi, Kanagawa, JP

PATENT ASSIGNEE(S): Ajinomoto Co., Inc., No. 15-1, Kyobashi 1-chome, Chuo-ku, Tokyo 104, JP

PATENT ASSIGNEE NO: 201191

AGENT: HOFFMANN - EITLE, Patent- und Rechtsanwaelte Arabellastrasse 4, 81925 Muenchen, DE

AGENT NUMBER: 101511

OTHER SOURCE: BEPA2000034 EP 0999267 A1 0020

SOURCE: Wila-EPZ-2000-H19-T1a

DOCUMENT TYPE: Patent

LANGUAGE: Anmeldung in Englisch; Veroeffentlichung in Englisch

DESIGNATED STATES: R AT; R BE; R CH; R CY; R DE; R DK; R ES; R FI; R FR; R GB; R GR; R IE; R IT; R LI; R LU; R MC; R NL; R PT; R SE; R AL; R LT; R LV; R MK; R RO; R SI

PATENT INFO. PUB. TYPE: EPA1 EUROPÄISCHE PATENTANMELDUNG

PATENT INFORMATION:

|                        | PATENT NO      | KIND DATE   |
|------------------------|----------------|-------------|
|                        | EP 999267      | A1 20000510 |
| 'OFFENLEGUNGS' DATE:   |                | 20000510    |
| APPLICATION INFO.:     | EP 1999-120934 | 19991102    |
| PRIORITY APPLN. INFO.: | JP 1998-312301 | 19981102    |
|                        | JP 1999-271204 | 19990924    |

ABEN Disclosed is a **coryneform** bacterium having **L-arginine-producing** ability in which an activity of intracellular argininosuccinate **synthase** is enhanced, wherein the activity of intracellular argininosuccinate **synthase** is enhanced by, for example, increasing copy number of a gene which codes for an argininosuccinate **synthase** derived from a **coryneform** bacterium in the bacterial cell, or modifying an expression regulation sequence for the gene in the bacterial cell so that expression of the gene should be enhanced. **L-Arginine** is **produced** by culturing the bacterium having **L-arginine-producing** ability in a medium so that **L-arginine** should be **produced** and accumulated, and collecting the **L-arginine** from the medium. The present invention provides a **coryneform** bacterium of improved **L-arginine-producing** ability and an efficient method for **producing L-arginine**.

## PATENT APPLICATION - PATENTANMELDUNG - DEMANDE DE BREVET

ACCESSION NUMBER: 974647 EUROPATFULL EW 200004 FS OS  
 TITLE: PROCESS FOR PRODUCING TARGET SUBSTANCES BY  
 FERMENTATION.  
 VERFAHREN ZUR HERSTELLUNG VON ZIELSUBSTANZEN DURCH  
 FERMENTATION.  
 PROCEDE DE PRODUCTION DE SUBSTANCE-CIBLE PAR  
 FERMENTATION.

INVENTOR(S): KUWABARA, Yoko, Ajinomoto Co., Inc., Tech. & Engin. Lab.,  
 1-1, Suzuki-cho, Kawasaki-ku, Kawasaki-shi, Kanagawa-ken  
 210, JP;  
 KIMURA, Eiichiro, Ajinomoto Co., Inc., Tech. & Engin. Lab., 1-1, Suzuki-cho, Kawasaki-ku, Kawasaki-shi, Kanagawa-ken 210, JP;  
 KAWAHARA, Yoshio, Ajinomoto Co., Inc., Tech. & Engin. Lab., 1-1, Suzuki-cho, Kawasaki-ku, Kawasaki-shi, Kanagawa-ken 210, JP;  
 NAKAMATSU, Tsuyoshi, Ajinomoto Co., Inc., Tech. & Engin. Lab., 1-1, Suzuki-cho, Kawasaki-ku, Kawasaki-shi, Kanagawa-ken 210, JP

PATENT ASSIGNEE(S): Ajinomoto Co., Inc., No. 15-1, Kyobashi 1-chome, Chuo-ku, Tokyo 104, JP

PATENT ASSIGNEE NO: 201191

AGENT: Strehl Schuebel-Hopf & Partner, Maximilianstrasse 54, 80538 Muenchen, DE

AGENT NUMBER: 100941

OTHER SOURCE: BEPA2000007 EP 0974647 A1 0064

SOURCE: Wila-EPZ-2000-H04-T1a

DOCUMENT TYPE: Patent

LANGUAGE: Anmeldung in Japanisch; Veroeffentlichung in Englisch; Verfahren in Englisch

DESIGNATED STATES: R CH; R DE; R DK; R ES; R FR; R GB; R IT; R LI; R NL

PATENT INFO. PUB. TYPE: EPA1 EUROPÄISCHE PATENTANMELDUNG (Internationale Anmeldung)

## PATENT INFORMATION:

|                        | PATENT NO                  | KIND DATE                      |
|------------------------|----------------------------|--------------------------------|
|                        | EP 974647                  | A1 20000126                    |
| 'OFFENLEGUNGS' DATE:   |                            | 20000126                       |
| APPLICATION INFO.:     | EP 1997-924309             | 19970604                       |
| PRIORITY APPLN. INFO.: | JP 1996-155575             | 19960617                       |
| RELATED DOC. INFO.:    | WO 97-JP1886<br>WO 9748790 | 970604 INTAKZ<br>971224 INTPNR |

ABEN An object resides in controlling the retaining and dissociation of a gene extrachromosomally for efficient **production** of an objective substance in a fermentative manner.

By culturing and growing a microorganism containing a plasmid carrying a gene disadvantageously functioning for the **production** of an objective enzyme and a temperature-sensitive replication origin, on which plasmid the functional gene is solely present, at a temperature at which the plasmid is replicable, and continuously culturing the microorganism at a temperature at which the plasmid is never replicable, to dissociate the plasmid from the cells and continue the culturing, the objective substance can efficiently be **produced**. <image>

PATENT APPLICATION - PATENTANMELDUNG - DEMANDE DE BREVET

ACCESSION NUMBER: 756007      EUROPATFULL EW 199705 FS OS  
 TITLE: Method of amplifying gene using artificial transposon.  
           Genvermehrungsverfahren mit kuenstlichen Transposon.  
           Methode d'amplification d'un gene utilisant un  
           transposon artificiel.

INVENTOR(S): Moriya, Mika, c/o Ajinomoto Co., Inc., No. 1-1  
 Suzuki-cho, Kawasaki-ku, Kawasaki-shi, Kanagawa-ken, JP;  
 Matsui, Hiroshi, c/o Ajinomoto Co., Inc., No. 1-1  
 Suzuki-cho, Kawasaki-ku, Kawasaki-shi, Kanagawa-ken, JP;  
 Yokozeiki, Kenzo, c/o Ajinomoto Co., Inc., No. 1-1  
 Suzuki-cho, Kawasaki-ku, Kawasaki-shi, Kanagawa-ken, JP;  
 Hirano, Seiko, c/o Ajinomoto Co., Inc., No. 1-1  
 Suzuki-cho, Kawasaki-ku, Kawasaki-shi, Kanagawa-ken, JP;  
 Hayakawa, Atsushi, c/o Ajinomoto Co., Inc., No. 1-1  
 Suzuki-cho, Kawasaki-ku, Kawasaki-shi, Kanagawa-ken, JP;  
 Izui, Masako, c/o Ajinomoto Co., Inc., No. 1-1  
 Suzuki-cho, Kawasaki-ku, Kawasaki-shi, Kanagawa-ken, JP;  
 Sugimoto, Masakazu, c/o Ajinomoto Co., Inc., No. 1-1  
 Suzuki-cho, Kawasaki-ku, Kawasaki-shi, Kanagawa-ken, JP  
 Ajinomoto Co., Ltd., 15-1, Kyobashi 1-chome, Chuo-ku,  
 Tokyo, JP  
 865891

PATENT ASSIGNEE(S): Hansen, Bernd, Dr. Dipl.-Chem. et al, Hoffmann, Eitle &  
 Partner, Patentanwaelte, Arabellastrasse 4, 81925  
 Muenchen, DE  
 4924

PATENT ASSIGNEE NO: ESP1997006 EP 0756007 A2 970129

AGENT: Wila-EPZ-1997-H05-T1a  
 Patent  
 Anmeldung in Englisch; Veroeffentlichung in Englisch  
 R DE; R ES; R GB; R IT  
 EPA2 EUROPAEISCHE PATENTANMELDUNG

PATENT INFORMATION:

| PATENT NO                             | KIND DATE   |
|---------------------------------------|-------------|
| EP 756007                             | A2 19970129 |
|                                       | 19970129    |
| APPLICATION INFO.: EP 1996-110491     | 19960628    |
| PRIORITY APPLN. INFO.: JP 1995-166541 | 19950630    |
| ABEN Construction                     |             |

A method of amplifying a desired gene in a chromosome of a **coryneform** bacterium, which comprises forming an artificial transposon in which a drug resistance gene and the desired gene are inserted into an insertion sequence of the **coryneform** bacterium, and introducing said artificial transposon into the **coryneform** bacterium.

## Effects

In accordance with the method of the present invention, a desired gene can be amplified in a chromosome in **coryneform bacteria** which are used in the industrial production of amino acids or nucleic acids, and the breeding of the **coryneform bacteria** can be improved. <image>

L19 ANSWER 4 OF 19 EUROPATFULL COPYRIGHT 2001 WILA

GRANTED PATENT - ERTEILTES PATENT - BREVET DELIVRE

ACCESSION NUMBER: 432168      EUROPAT FULL      EW 199642      FS PS

TITLE: GENETICALLY ENGINEERED COCCIDIOSIS VACCINE.  
 GENETECHNOLOGISCH HERGESTELLTER COCCIDIOSE-IMPFSTOFF.  
 VACCIN CONTRE LA COCCIDIOSE **PREPARE PAR GENIE**  
 GENETIQUE.  
 INVENTOR(S): ANDERSON, David, M., 13509 Bailey Drive, Rockville, MA  
 20850, US;  
 McCANDLISS, Russell, J., 939 Pointer Ridge Dr.,  
 Gaithersburg, MA 20878, US;  
 STRAUSBERG, Susan, Lee, 2815 Hathaway Terrace, Silver  
 Spring, MA 20906, US;  
 STRAUSBERG, Robert, L., 2815 Hathaway Terrace, Silver  
 Spring, MA 20906, US  
 PATENT ASSIGNEE(S): BRITISH TECHNOLOGY GROUP USA INC, 2200 Renaissance  
 Boulevard, Gulph Mills, Pennsylvania 19406, US  
 PATENT ASSIGNEE NO: 1402684  
 AGENT: White, Martin Paul et al, Kilburn & Strode, 30 John  
 Street, London WC1N 2DD, GB  
 AGENT NUMBER: 74783  
 OTHER SOURCE: EPB1996066 EP 0432168 B1 961016  
 SOURCE: Wila-EPS-1996-H42-T1  
 DOCUMENT TYPE: Patent  
 LANGUAGE: Anmeldung in Englisch; Veroeffentlichung in Englisch  
 DESIGNATED STATES: R AT; R BE; R CH; R DE; R FR; R GB; R IT; R LI; R LU; R  
 NL; R SE  
 PATENT INFO.PUB.TYPE: EPB1 EUROPÄISCHE PATENTSCHRIFT (Internationale  
 Anmeldung)  
 PATENT INFORMATION:

|                        | PATENT NO      | KIND DATE     |
|------------------------|----------------|---------------|
|                        | EP 432168      | B1 19961016   |
| 'OFFENLEGUNGS' DATE:   |                | 19910619      |
| APPLICATION INFO.:     | EP 1989-908301 | 19890705      |
| PRIORITY APPLN. INFO.: | US 1988-215162 | 19880705      |
| RELATED DOC. INFO.:    | WO 89-US2918   | 890705 INTAKZ |
|                        | WO 9000403     | 900125 INTPNR |
| REFERENCE PAT. INFO.:  | EP 231537 A    | EP 324648 A   |
|                        | EP 344808 A    | WO 86-00528 A |
|                        | US 4650676 A   |               |

L19 ANSWER 5 OF 19 EUROPATFULL COPYRIGHT 2001 WILA

PATENT APPLICATION - PATENTANMELDUNG - DEMANDE DE BREVET

ACCESSION NUMBER: 215388 EUROPATFULL EW 198713 FS OS STA B  
 TITLE: Plasmid vector and a method for regulation of gene  
 expression using the same.  
 Plasmidvektor und ein Verfahren zur Regulierung der  
 Genexpression unter Verwendung dieses Vektors.  
 Vecteur de plasmide et une methode de regulation  
 d'expression de gene par utilisation de ce vecteur.  
 INVENTOR(S): Morinaga, Yasushi Central Research Laboratories,  
 Ajinomoto Co., Inc. 1-1, Suzuki-cho Kawasaki-ku,  
 Kawasaki-shi Kanagawa-ken, JP;  
 Tsuchiya, Makoto Central Research Laboratories,  
 Ajinomoto Co., Inc. 1-1, Suzuki-cho Kawasaki-ku,  
 Kawasaki-shi Kanagawa-ken, JP  
 PATENT ASSIGNEE(S): AJINOMOTO CO., INC., 5-8, Kyobashi 1-chome, Chuo-ku,  
 Tokyo 104, JP  
 PATENT ASSIGNEE NO: 201190  
 AGENT: Strehl, Schuebel-Hopf, Groening, Schulz,  
 Widenmayerstrasse 17 Postfach 22 03 45, D-8000 Muenchen  
 22, DE  
 OTHER SOURCE: ESP1987010 EP 0215388 A1 870325  
 SOURCE: Wila-EPZ-1987-H13-T1

DOCUMENT TYPE: Patent  
LANGUAGE: Anmeldung in Englisch; Veröffentlichung in Englisch  
DESIGNATED STATES: R DE; R FR; R GB  
PATENT INFO.PUB.TYPE: EPA1 EUROPÄISCHE PATENTANMELDUNG  
PATENT INFORMATION:

|                        | PATENT NO   | KIND DATE   |
|------------------------|---|-------------|
|                        | EP 215388   | A1 19870325 |
| 'OFFENLEGUNGS' DATE:   |   | 19870325    |
| APPLICATION INFO.:     | EP 1986-112251  | 19860904    |
| PRIORITY APPLN. INFO.: | JP 1985-197277  | 19850906    |
|                        | JP 1986-137833  | 19860613    |
| ABEN                   | A plasmid vector capable of replicating in a <b>Coryneform</b> bacterial cell bearing a base sequence (a) functioning as a promoter in a <b>Coryneform</b> bacterium, a base sequence (b) functioning as an operator downstream from the base sequence (a), a base sequence (c) functioning as a site for ribosome binding in a <b>Coryneform</b> bacterial cell, a base sequence (d) functioning as a translation initiation codon, and a gene to be expressed which is directly ligated with the base sequence (d) and bearing a gene coding for a <b>repressor</b> protein capable of binding to the base sequence (d) functioning as an operator. |             |

L19 ANSWER 6 OF 19 PCTFULL COPYRIGHT 2001 MicroPatent  
ACCESSION NUMBER: 1997025432 PCTFULL  
TITLE (ENGLISH): IMPROVED MUTANTS OF (2,5-DKG) REDUCTASE  
TITLE (FRENCH): MUTANTS AMELIORES DE (2,5 DKG) REDUCTASE  
INVENTOR(S): POWERS, David, B.; ANDERSON, Stephen  
PATENT ASSIGNEE(S): RUTGERS, THE STATE UNIVERSITY OF NEW JERSEY; POWERS,  
David, B.; ANDERSON, Stephen  
LANGUAGE OF PUBL.: English  
DOCUMENT TYPE: Patent  
PATENT INFORMATION:

|                      | NUMBER  | KIND        | DATE     |
|----------------------|---|-------------|----------|
|                      | WO 9725432  | A2 19970717 |          |
| DESIGNATED STATES:   | AL AM AT AU AZ BA BB BG BR BY CA CH CN CU CZ DE DK EE<br>ES FI GB GE HU IL KE KG KP KR KZ LC LK LR LS LT LU LV<br>MD MG MK MN MW NO NZ PL PT RO RU SG SI SK TJ TM TR<br>TT UA UG US UZ VN KE LS MW SD SZ UG AM AZ BY KG KZ MD<br>TM AT BE CH DE DK ES FI FR GB GR IE IT LU MC NL PT SE<br>BF BJ CF CG CI CM ML MR NE SN TD TG |             |          |
| APPLICATION INFO.:   | WO 1997-US97  |             | 19970109 |
| PRIORITY (ORIGINAL): | US 1996-8/584019  |             | 19960111 |
|                      | US 1996-8/585595  |             | 19960116 |

ABEN Mutants of 2,5-diketo-D-gluconic acid reductase A and B, enzymes used to **produce** 2-keto-L-gulonic acid, a precursor of ascorbic acid (vitamin C), are **prepared** by site-directed mutagenesis. These mutants may exhibit one or more of the following characteristics: improved temperature stability, increased resistance to substrate inhibition, increased turnover of the substrate by the enzyme and increased affinity for the substrate.

ABF La presente invention concerne la **preparation**, par mutagenese dirigee sur un site, de mutants de reductase A et B d'acide 2,5-diceto-D-gluconique, c'est-a-dire des enzymes servant a la **production** de l'acide 2-ceto-L-gulonique qui est un precurseur de l'acide ascorbique (vitamine C). Ces mutants peuvent presenter l'une au moins des caracteristiques suivantes: stabilite thermique amelioree, resistance accrue a l'inhibition du substrat, exploitation plus importante du substrat par l'enzyme et affinite accrue pour le substrat.

L19 ANSWER 7 OF 19 PCTFULL COPYRIGHT 2001 MicroPatent  
 ACCESSION NUMBER: 1994005772 PCTFULL  
 TITLE (ENGLISH): IMPROVED ENZYMES FOR THE PRODUCTION OF  
 2-KETO-L-GULONIC ACID  
 TITLE (FRENCH): ENZYMES AMELIOREES POUR LA PRODUCTION  
 D'ACIDE 2-CETO-L-GULONIQUE  
 INVENTOR(S): LAZARUS, Robert, A.; HURLE, Mark; ANDERSON, Stephen;  
 POWERS, David, B.  
 PATENT ASSIGNEE(S): RUTGERS, THE STATE UNIVERSITY OF NEW JERSEY  
 LANGUAGE OF PUBL.: English  
 DOCUMENT TYPE: Patent  
 PATENT INFORMATION:

| NUMBER | KIND | DATE |
|--------|------|------|
|--------|------|------|

WO 9405772 A1 19940317

DESIGNATED STATES: AU CA FI JP KP KR NZ VN AT BE CH DE DK ES FR GB GR IE  
 IT LU MC NL PT SE  
 APPLICATION INFO.: WO 1993-US8411 19930907  
 PRIORITY (ORIGINAL): US 1992-7/941414 19920908

ABEN Mutants of 2,5-diketo-D-gluconic acid reductase A, an enzyme used  
 to **produce** 2-keto-L-gulonic acid, a precursor of ascorbic acid  
 (vitamin C) are **prepared** by site-directed mutagenesis. These mutants  
 have increased catalytic activity, increased expression levels, and/or  
 enhanced temperature stability.  
 ABF On **prepare**, par mutagenese dirigee, des mutants d'acide 2, 5-  
 diceto-D-gluconique reductase A, une enzyme utilisee pour  
**produire** l'acide 2-ceto-L-gulonique, qui est un precurseur de l'acide ascorbique  
 (vitamine C). Ces mutants presentent une activite catalytique accrue,  
 des niveaux d'expression accrus, et/ou une meilleure stabilite thermique.

L19 ANSWER 8 OF 19 PCTFULL COPYRIGHT 2001 MicroPatent  
 ACCESSION NUMBER: 1990000403 PCTFULL  
 TITLE (ENGLISH): GENETICALLY ENGINEERED COCCIDIOSIS VACCINE  
 TITLE (FRENCH): VACCIN CONTRE LA COCCIDIOSE **PREPARE PAR**  
 GENIE GENETIQUE  
 INVENTOR(S): ANDERSON, David, M.; McCANDLISS, Russell, J.;  
 STRAUSBERG, Susan, Lee; STRAUSBERG, Robert, L.  
 GENEX CORPORATION; ANDERSON, David, M.; McCANDLISS,  
 Russell, J.; STRAUSBERG, Susan, Lee; STRAUSBERG,  
 Robert, L.  
 LANGUAGE OF PUBL.: English  
 DOCUMENT TYPE: Patent  
 PATENT INFORMATION:

| NUMBER | KIND | DATE |
|--------|------|------|
|--------|------|------|

WO 9000403 A1 19900125

DESIGNATED STATES: AT BE CH DE FR GB IT JP LU NL SE US  
 APPLICATION INFO.: WO 1989-US2918 19890705  
 PRIORITY (ORIGINAL): US 1988-215162 19880705  
 ABEN A cloned gene or fragment thereof encodes antigenic proteins that  
 bind with a monoclonal or polyvalent antibody that is directed against  
 an antigenic protein of avian coccidia.  
 ABF Gene clone ou fragment de celui-ci codant pour des proteines  
 antigeniques qui se lient a un anticorps monoclonal ou polyvalent dirige  
 contre une proteine antigenique des coccidies aviennes.

L19 ANSWER 9 OF 19 PCTFULL COPYRIGHT 2001 MicroPatent  
 ACCESSION NUMBER: 1988001646 PCTFULL  
 TITLE (ENGLISH): UNIVERSAL SYSTEM FOR TRANSPOSON MUTAGENESIS  
 TITLE (FRENCH): SYSTEME UNIVERSEL DE MUTAGENESE DE TRANSPOSONS

INVENTOR(S): KOZLOWSKI, Maya; GLASSE-DAVIES, Roger, Wayne  
PATENT ASSIGNEE(S): ALLELIX INC.; KOZLOWSKI, Maya; GLASSE-DAVIES, Roger,  
Wayne  
LANGUAGE OF PUBL.: English  
DOCUMENT TYPE: Patent  
PATENT INFORMATION:

NUMBER KIND DATE

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WO 8801646 A1 19880310

DESIGNATED STATES: AT BE CH DE FR GB IT JP LU NL SE US  
APPLICATION INFO.: WO 1987-GB598 19870825  
PRIORITY (ORIGINAL): US 1986-900428 19860826

ABEN Universal system for inducing genetic transposition in prokaryotic or eukaryotic cells. The system is universal in that it provides a means for inducing transposition in any organism. The invention further discloses plasmid vectors capable of mediating such genetic transposition, and novel uses for transposable elements. Le systeme universel decrit permet l'induction d'une transposition genetique dans des cellules prokaryotiques ou eukaryotiques. Ce systeme est dit universel dans le sens qu'il fournit un moyen d'induire une transposition dans n'importe quel organisme. La presente invention decrit en outre des vecteurs de plasmides capables de vehiculer une telle transposition genetique ainsi qu'un nouvel emploi d'elements transposables.

L19 ANSWER 10 OF 19 PCTFULL COPYRIGHT 2001 MicroPatent  
ACCESSION NUMBER: 1987000202 PCTFULL  
TITLE (ENGLISH): COMPOSITE PLASMIDS FOR AMINO ACID **SYNTHESIS**  
TITLE (FRENCH): PLASMIDES COMPOSITES ET **SYNTHESE D'ACIDES**  
AMINES  
INVENTOR(S): EDWARDS, Mark, Richard; TAYLOR, Paul, Phillip; HUNTER,  
Michael, George; FOTHERINGHAM, Ian, Graham  
PATENT ASSIGNEE(S): THE NUTRASWEET COMPANY  
LANGUAGE OF PUBL.: English  
DOCUMENT TYPE: Patent  
PATENT INFORMATION:

NUMBER KIND DATE

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WO 8700202 A1 19870115

DESIGNATED STATES: DE FR GB IT JP  
APPLICATION INFO.: WO 1986-US1353 19860624  
PRIORITY (ORIGINAL): US 1985-747732 19850624

ABEN Composite plasmids containing multiple genes in transcriptional units. These composite plasmids are useful for the **production** of amino acids, particularly aromatic amino acids.

ABF La presente invention se rapporte a des plasmides composites contenant des genes multiples en unites de transcription. Ces plasmides composites sont utiles dans la **production** d'acides amines, en particulier d'acides amines aromatiques.

L19 ANSWER 11 OF 19 USPATFULL  
ACCESSION NUMBER: 1998:108248 USPATFULL  
TITLE: Method of amplifying genes using artificial transposons in coryneform bacteria  
INVENTOR(S): Moriya, Mika, Kawasaki, Japan  
Matsui, Hiroshi, Kawasaki, Japan  
Yokozeki, Kenzo, Kawasaki, Japan  
Hirano, Seiko, Kawasaki, Japan  
Hayakawa, Atsushi, Kawasaki, Japan  
Izui, Masako, Kawasaki, Japan  
Sugimoto, Masakazu, Kawasaki, Japan  
PATENT ASSIGNEE(S): Ajinomoto Co., Inc., Tokyo, Japan (non-U.S.  
corporation)

|                     | NUMBER         | KIND | DATE         |     |
|---------------------|----------------|------|--------------|-----|
| PATENT INFORMATION: | US 5804414     |      | 19980908     | <-- |
| APPLICATION INFO.:  | US 1996-674168 |      | 19960701 (8) |     |

|                       | NUMBER  | DATE     |
|-----------------------|---|----------|
| PRIORITY INFORMATION: | JP 1995-166541                                    | 19950630 |
| DOCUMENT TYPE:        | Utility   |          |
| FILE SEGMENT:         | Granted   |          |
| PRIMARY EXAMINER:     | Railey, II, Johnny F.                             |          |
| LEGAL REPRESENTATIVE: | Oblon, Spivak, McClelland, Maier & Neustadt, P.C. |          |
| NUMBER OF CLAIMS:     | 12  |          |
| EXEMPLARY CLAIM:      | 1   |          |
| NUMBER OF DRAWINGS:   | 38 Drawing Figure(s); 38 Drawing Page(s)          |          |
| LINE COUNT:           | 2733  |          |

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

AB A method of amplifying a desired gene in a chromosome of a coryneform bacterium, which comprises forming an artificial transposon in which a drug resistance gene and the desired gene are inserted into an insertion sequence of the coryneform bacterium, and introducing said artificial transposon into the coryneform bacterium. In accordance with the method of the present invention, a desired gene can be amplified in a chromosome in coryneform bacteria which are used in the industrial **production** of amino acids or nucleic acids.

L19 ANSWER 12 OF 19 USPATFULL  
 ACCESSION NUMBER: 1998:6787 USPATFULL  
 TITLE: Isolated protein from Eimeria useful as a cross species vaccine  
 INVENTOR(S): Anderson, David M., Rockville, MD, United States  
 McCandliss, Russell J., Gaithersburg, MD, United States  
 Strausberg, Susan Lee, Silver Spring, MD, United States  
 Strausberg, Robert L., Silver Spring, MD, United States  
 Ruff, Michael D., Bowie, MD, United States  
 Danforth, Harry D., Severn, MD, United States  
 Augustine, Patricia C., Laurel, MD, United States  
 British Technology Group USA Inc., Gulph Mills, PA, United States (U.S. corporation)  
 The United States of America as represented by the Department of Agriculture, Washington, DC, United States (U.S. corporation)

|                       | NUMBER   | KIND | DATE         |     |
|-----------------------|--|------|--------------|-----|
| PATENT INFORMATION:   | US 5709862   |      | 19980120     | <-- |
| APPLICATION INFO.:    | US 1993-148279   |      | 19931108 (8) |     |
| RELATED APPLN. INFO.: | Division of Ser. No. US 1992-879137, filed on 5 May 1992, now patented, Pat. No. US 5279960 which is a continuation of Ser. No. US 1988-215162, filed on 5 Jul 1988, now abandoned which is a continuation-in-part of Ser. No. US 1985-746520, filed on 19 Jun 1985, now abandoned And a continuation-in-part of Ser. No. US 1984-627811, filed on 5 Jul 1984, now abandoned |      |              |     |
| DOCUMENT TYPE:        | Utility  |      |              |     |
| FILE SEGMENT:         | Granted  |      |              |     |
| PRIMARY EXAMINER:     | Caputa, Anthony C.   |      |              |     |
| LEGAL REPRESENTATIVE: | Banner & Witcoff, Ltd.   |      |              |     |
| NUMBER OF CLAIMS:     | 2  |      |              |     |
| EXEMPLARY CLAIM:      | 2  |      |              |     |
| NUMBER OF DRAWINGS:   | 15 Drawing Figure(s); 15 Drawing Page(s)   |      |              |     |
| LINE COUNT:           | 2682   |      |              |     |

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

AB A cloned gene or fragment thereof encodes antigenic proteins that bind with a monoclonal or polyvalent antibody that is directed against an antigenic protein of avian coccidia.

L19 ANSWER 13 OF 19 USPATFULL  
ACCESSION NUMBER: 97:70926 USPATFULL  
TITLE: *Eimeria* antigenic composition which elicits antibodies against avian coccidiosis  
INVENTOR(S): Jacobson, James W., Rockville, MD, United States  
Strausberg, Robert L., Silver Spring, MD, United States  
Wilson, Susan D., Rockville, MD, United States  
Pope, Sharon H., Gaithersburg, MD, United States  
Strausberg, Susan Lee, Silver Spring, MD, United States  
Ruff, Michael D., Bowie, MD, United States  
Augustine, Patricia C., Laurel, MD, United States  
Danforth, Harry D., Severn, MD, United States  
PATENT ASSIGNEE(S): BTG USA Inc., Gulph Mills, PA, United States (U.S. corporation)

|                       | NUMBER  | KIND | DATE         |     |
|-----------------------|---|------|--------------|-----|
| PATENT INFORMATION:   | US 5656485  |      | 19970812     | <-- |
| APPLICATION INFO.:    | US 1996-691454  |      | 19960802 (8) |     |
| RELATED APPLN. INFO.: | Division of Ser. No. US 1995-484387, filed on 7 Jun 1995, now patented, Pat. No. US 5597571 which is a division of Ser. No. US 1993-148432, filed on 8 Nov 1993, now patented, Pat. No. US 5482709, issued on 9 Jan 1996 which is a division of Ser. No. US 1990-581693, filed on 12 Sep 1990, now patented, Pat. No. US 5273901, issued on 28 Dec 1993 which is a continuation-in-part of Ser. No. US 1988-215162, filed on 5 Jul 1988, now abandoned which is a continuation-in-part of Ser. No. US 1985-746520, filed on 19 Jun 1985, now abandoned which is a continuation-in-part of Ser. No. US 1984-627811, filed on 5 Jul 1984, now abandoned |      |              |     |

DOCUMENT TYPE: Utility  
FILE SEGMENT: Granted  
PRIMARY EXAMINER: Budens, Robert D.  
ASSISTANT EXAMINER: Scheiner, Laurie  
NUMBER OF CLAIMS: 5  
EXEMPLARY CLAIM: 1  
NUMBER OF DRAWINGS: 14 Drawing Figure(s); 12 Drawing Page(s)  
LINE COUNT: 1083

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

AB This invention relates to novel recombinant antigenic proteins of avian coccidiosis, and fragments thereof containing antigenic determinants, and to the genes that encode the antigenic peptides. This invention also relates to vaccines made using the novel antigenic proteins of avian coccidiosis and to methods of immunizing chickens against avian coccidia.

L19 ANSWER 14 OF 19 USPATFULL  
ACCESSION NUMBER: 97:56556 USPATFULL  
TITLE: Plasmid vector and a method for regulation of gene expression using the same  
INVENTOR(S): Morinaga, Yasushi, Yokohama, Japan  
Tsuchiya, Makoto, Kawasaki, Japan  
PATENT ASSIGNEE(S): Ajinomoto Co., Inc., Tokyo, Japan (non-U.S. corporation)

|                     | NUMBER     | KIND | DATE     |     |
|---------------------|------------|------|----------|-----|
| PATENT INFORMATION: | US 5643790 |      | 19970701 | <-- |

APPLICATION INFO.: US 1995-389772 19950216 (8)  
 RELATED APPLN. INFO.: Continuation of Ser. No. US 1993-167112, filed on 16 Dec 1993, now patented, Pat. No. US 5426050 which is a continuation of Ser. No. US 1993-35502, filed on 22 Mar 1993, now abandoned which is a continuation of Ser. No. US 1991-774374, filed on 10 Oct 1991, now abandoned which is a continuation of Ser. No. US 1989-339876, filed on 18 Apr 1989, now abandoned which is a continuation of Ser. No. US 1986-901642, filed on 29 Aug 1986, now abandoned

|                       | NUMBER  | DATE     |
|-----------------------|---|----------|
| PRIORITY INFORMATION: | JP 1985-197277                                    | 19850906 |
|                       | JP 1986-137833                                    | 19860613 |
| DOCUMENT TYPE:        | Utility   |          |
| FILE SEGMENT:         | Granted   |          |
| PRIMARY EXAMINER:     | Fleisher, Mindy                                   |          |
| ASSISTANT EXAMINER:   | Degen, Nancy J.                                   |          |
| LEGAL REPRESENTATIVE: | Oblon, Spivak, McClelland, Maier & Neustadt, P.C. |          |
| NUMBER OF CLAIMS:     | 9   |          |
| EXEMPLARY CLAIM:      | 1   |          |
| NUMBER OF DRAWINGS:   | 9 Drawing Figure(s); 9 Drawing Page(s)            |          |
| LINE COUNT:           | 961   |          |

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

AB A plasmid vector capable of replicating in a Coryneform bacterial cell bearing a base sequence (a) functioning as an promoter in a Coryneform bacterium, a base sequence (b) functioning as an operator downstream from the base sequence (a), a base sequence (c) functioning as a site for ribosome binding in a Coryneform bacterial cell, a base sequence (d) functioning as a translation initiation codon, and a gene to be expressed which is directly ligated with the base sequence (d) and bearing a gene coding for a repressor protein capable of binding to the base sequence (d) functioning as an operator.

L19 ANSWER 15 OF 19 USPATFULL  
 ACCESSION NUMBER: 97:7683 USPATFULL  
 TITLE: Eimeria antigenic composition which elicits antibodies against avian coccidiosis  
 INVENTOR(S): Jacobson, James W., Rockville, MD, United States  
 Strausberg, Robert L., Silver Spring, MD, United States  
 Wilson, Susan D., Rockville, MD, United States  
 Pope, Sharon H., Gaithersburg, MD, United States  
 Strausberg, Susan L., Silver Spring, MD, United States  
 Ruff, Michael D., Bowie, MD, United States  
 Augustine, Patricia C., Laurel, MD, United States  
 Danforth, Harry D., Severn, MD, United States  
 PATENT ASSIGNEE(S): British Technology Group USA Inc., Gulph Mills, PA, United States (U.S. corporation)

|                       | NUMBER  | KIND         | DATE |
|-----------------------|---|--------------|------|
| PATENT INFORMATION:   | US 5597571  | 19970128     | <--  |
| APPLICATION INFO.:    | US 1995-484387  | 19950607 (8) |      |
| RELATED APPLN. INFO.: | Division of Ser. No. US 1993-148432, filed on 8 Nov 1993, now patented, Pat. No. US 5482709 which is a division of Ser. No. US 1990-581693, filed on 12 Sep 1990, now patented, Pat. No. US 5273901 which is a continuation-in-part of Ser. No. US 1988-215162, filed on 5 Jul 1988, now abandoned which is a continuation-in-part of Ser. No. US 1985-746520, filed on 19 Jun 1985, now abandoned which is a continuation-in-part of Ser. No. US 1984-627811, filed on 5 Jul 1984, now abandoned |              |      |

DOCUMENT TYPE: Utility  
FILE SEGMENT: Granted  
PRIMARY EXAMINER: Nucker, Christine M.  
ASSISTANT EXAMINER: Scheiner, Laurie  
LEGAL REPRESENTATIVE: Sterne, Kessler, Goldstein and Fox P.L.L.C.  
NUMBER OF CLAIMS: 2  
EXEMPLARY CLAIM: 1  
NUMBER OF DRAWINGS: 14 Drawing Figure(s); 12 Drawing Page(s)  
LINE COUNT: 1070

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

AB This invention relates to novel recombinant antigenic proteins of avian coccidiosis, and fragments thereof containing antigenic determinants, and to the genes that encode the antigenic peptides. This invention also relates to vaccines made using the novel antigenic proteins of avian coccidiosis and to methods of immunizing chickens against avian coccidia.

L19 ANSWER 16 OF 19 USPATFULL  
ACCESSION NUMBER: 96:3507 USPATFULL  
TITLE: Eimeria antigenic composition which elicits antibodies against avian coccidiosis  
INVENTOR(S): Jacobson, James W., Rockville, MD, United States  
Strausberg, Robert L., Silver Spring, MD, United States  
Wilson, Susan D., Rockville, MD, United States  
Pope, Sharon H., Gaithersburg, MD, United States  
Strausberg, Susan L., Silver Spring, MD, United States  
Ruff, Michael D., Bowie, MD, United States  
Augustine, Patricia C., Laurel, MD, United States  
Danforth, Harry D., Severn, MD, United States  
PATENT ASSIGNEE(S): British Technology Group USA Inc., Gulph Mills, PA, United States (U.S. corporation)  
The United States of America as represented by the Dept. of Agriculture, Washington, DC, United States (U.S. government)

| NUMBER  | KIND | DATE         |     |
|---|------|--------------|-----|
| US 5482709  |      | 19960109     | <-- |
| US 1993-148432  |      | 19931108 (8) |     |
| Division of Ser. No. US 1990-581693, filed on 12 Sep 1990, now patented, Pat. No. US 5273901 which is a continuation-in-part of Ser. No. US 1988-215162, filed on 5 Jul 1988 which is a continuation-in-part of Ser. No. US 1985-746520, filed on 19 Jun 1985, now abandoned which is a continuation-in-part of Ser. No. US 1984-627811, filed on 5 Jul 1984, now abandoned |      |              |     |

DOCUMENT TYPE: Utility  
FILE SEGMENT: Granted  
PRIMARY EXAMINER: Mosher, Mary E.  
ASSISTANT EXAMINER: Scheiner, Laurie  
LEGAL REPRESENTATIVE: Sterne, Kessler, Goldstein & Fox  
NUMBER OF CLAIMS: 1  
EXEMPLARY CLAIM: 1  
NUMBER OF DRAWINGS: 14 Drawing Figure(s); 12 Drawing Page(s)  
LINE COUNT: 1058

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

AB This invention relates to novel recombinant antigenic proteins of avian coccidiosis, and fragments thereof containing antigenic determinants, and to the genes that encode the antigenic peptides. This invention also relates to vaccines made using the novel antigenic proteins of avian coccidiosis and to methods of immunizing chickens against avian coccidia.

L19 ANSWER 17 OF 19 USPATFULL

ACCESSION NUMBER: 95:54321 USPATFULL  
 TITLE: Plasmid vectors for expression of genes in coryneform bacteria  
 INVENTOR(S): Morinaga, Yasushi, Kawasaki, Japan  
 Tsuchiya, Makoto, Kawasaki, Japan  
 PATENT ASSIGNEE(S): Ajinomoto Co., Inc., Tokyo, Japan (non-U.S. corporation)

|                       | NUMBER  | KIND | DATE         |
|-----------------------|---|------|--------------|
| PATENT INFORMATION:   | US 5426050  |      | 19950620     |
| APPLICATION INFO.:    | US 1993-167112  |      | 19931216 (8) |
| RELATED APPLN. INFO.: | Continuation of Ser. No. US 1993-35502, filed on 22 Mar 1993, now abandoned which is a continuation of Ser. No. US 1991-774374, filed on 10 Oct 1991, now abandoned which is a continuation of Ser. No. US 1989-339876, filed on 18 Apr 1989, now abandoned which is a continuation of Ser. No. US 1986-901642, filed on 29 Aug 1986, now abandoned |      |              |

|                       | NUMBER                                      | DATE     |
|-----------------------|---|----------|
| PRIORITY INFORMATION: | JP 1985-197277                              | 19850906 |
| DOCUMENT TYPE:        | JP 1986-137833                              | 19860613 |
| FILE SEGMENT:         | Utility                                     |          |
| PRIMARY EXAMINER:     | Granted                                     |          |
| ASSISTANT EXAMINER:   | Schwartz, Richard A.                        |          |
| LEGAL REPRESENTATIVE: | Carter, Philip W.                           |          |
| NUMBER OF CLAIMS:     | Oblon, Spivak, McClelland, Maier & Neustadt |          |
| EXEMPLARY CLAIM:      | 2   |          |
| NUMBER OF DRAWINGS:   | 1   |          |
| LINE COUNT:           | 9 Drawing Figure(s); 9 Drawing Page(s)      |          |

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

AB A recombinant plasmid vector is provided which is capable of replicating and expressing in a Coryneform bacterial cell, which plasmid vector is pEC 701, pEC 702, pEC 801, pEC 830 or pEC 901.

L19 ANSWER 18 OF 19 USPATFULL  
 ACCESSION NUMBER: 94:5814 USPATFULL  
 TITLE: 25 KD coccidial antigen of eimeria tenella  
 INVENTOR(S): Anderson, David M., Rockville, MD, United States  
 McCandliss, Russell J., Gaithersburg, MD, United States  
 Strausberg, Susan L., Silver Spring, MD, United States  
 Strausberg, Robert L., Silver Spring, MD, United States  
 Ruff, Michael D., Bowie, MD, United States  
 Danforth, Harry D., Severn, MD, United States  
 Augustine, Patricia C., Laurel, MD, United States  
 Enzon Corp., Piscataway, NJ, United States (U.S. corporation)  
 U.S.A. Dept. of Agriculture, Washington, DC, United States (U.S. corporation)

|                       | NUMBER   | KIND | DATE         |
|-----------------------|--|------|--------------|
| PATENT INFORMATION:   | US 5279960   |      | 19940118     |
| APPLICATION INFO.:    | US 1992-879137   |      | 19920505 (7) |
| RELATED APPLN. INFO.: | Continuation of Ser. No. US 1988-215162, filed on 5 Jul 1988, now abandoned which is a continuation-in-part of Ser. No. US 1985-746520, filed on 19 Jun 1985, now abandoned which is a continuation-in-part of Ser. No. US 1984-627811, filed on 5 Jul 1984, now abandoned |      |              |
| DOCUMENT TYPE:        | Utility  |      |              |
| FILE SEGMENT:         | Granted  |      |              |

PRIMARY EXAMINER: Lacey, David L.  
ASSISTANT EXAMINER: Nisbet, T. Michael  
LEGAL REPRESENTATIVE: Sterne, Kessler, Goldstein & Fox  
NUMBER OF CLAIMS: 6  
EXEMPLARY CLAIM: 1  
NUMBER OF DRAWINGS: 15 Drawing Figure(s); 15 Drawing Page(s)  
LINE COUNT: 2607  
CAS INDEXING IS AVAILABLE FOR THIS PATENT.  
AB A cloned gene or fragment thereof encodes antigenic proteins that bind with a monoclonal or polyvalent antibody that is directed against an antigenic protein of avian coccidia.

L19 ANSWER 19 OF 19 USPATFULL  
ACCESSION NUMBER: 93:109000 USPATFULL  
TITLE: Genetically engineered coccidiosis sporozoite 21.5 Kb antigen, ac-6b  
INVENTOR(S): Jacobson, James W., Rockville, MD, United States  
Strausberg, Robert L., Silver Spring, MD, United States  
Wilson, Susan D., Rockville, MD, United States  
Pope, Sharon H., Gaithersburg, MD, United States  
Strausberg, Susan L., Silver Spring, MD, United States  
Ruff, Michael D., Bowie, MD, United States  
Augustine, Patricia C., Laurel, MD, United States  
Danforth, Harry D., Severn, MD, United States  
Enzon Corp., S. Plainfield, NJ, United States (U.S. corporation)  
U.S. Dept. of Agriculture, Washington, DC, United States (U.S. government)

|                       | NUMBER         | KIND | DATE  |
|-----------------------|----------------|------|---|
| PATENT INFORMATION:   | US 5273901     |      | 19931228 <--  |
| APPLICATION INFO.:    | US 1990-581693 |      | 19900912 (7)  |
| RELATED APPLN. INFO.: |                |      | Continuation-in-part of Ser. No. US 1988-215162, filed on 5 Jul 1988 which is a continuation-in-part of Ser. No. US 1985-746520, filed on 19 Jun 1985, now abandoned which is a continuation-in-part of Ser. No. US 1984-627811, filed on 5 Jul 1984, now abandoned |

DOCUMENT TYPE: Utility  
FILE SEGMENT: Granted  
PRIMARY EXAMINER: Chan, Y. Christina  
ASSISTANT EXAMINER: Nisbet, T. Michael  
LEGAL REPRESENTATIVE: Sterne, Kessler, Goldstein & Fox  
NUMBER OF CLAIMS: 4  
EXEMPLARY CLAIM: 1  
NUMBER OF DRAWINGS: 14 Drawing Figure(s); 12 Drawing Page(s)  
LINE COUNT: 1018  
CAS INDEXING IS AVAILABLE FOR THIS PATENT.

AB This invention relates to novel recombinant antigenic proteins of avian coccidiosis, and fragments thereof containing antigenic determinants, and to the genes that encode the antigenic peptides. This invention also relates to vaccines made using the novel antigenic proteins of avian coccidiosis and to methods of immunizing chickens against avian coccidia.

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115 and arginine

3

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**Database:**

115 and arginine

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| USPT,PGPB      | l15 and arginine                                       | 3                | <u>L16</u>      |
| USPT,PGPB      | l14 and l1   | 3                | <u>L15</u>      |
| USPT,PGPB      | l13 or l12 or l11 or l10 or l9 or l8 or l7 or l6 or l5 | 16818            | <u>L14</u>      |
| USPT,PGPB      | ((536/23.7)!.CCLS.) )                                  | 1343             | <u>L13</u>      |
| USPT,PGPB      | ((530/350)!.CCLS.) )                                   | 5664             | <u>L12</u>      |
| USPT,PGPB      | ((435/455)!.CCLS.) )                                   | 879              | <u>L11</u>      |
| USPT,PGPB      | ((435/440)!.CCLS.) )                                   | 324              | <u>L10</u>      |
| USPT,PGPB      | ((435/320.1)!.CCLS.) )                                 | 9621             | <u>L9</u>       |
| USPT,PGPB      | ((435/252.32)!.CCLS.) )                                | 106              | <u>L8</u>       |
| USPT,PGPB      | ((435/252.3)!.CCLS.) )                                 | 4833             | <u>L7</u>       |
| USPT,PGPB      | ((435/252.1)!.CCLS.) )                                 | 1239             | <u>L6</u>       |
| USPT,PGPB      | ((435/243)!.CCLS.) )                                   | 847              | <u>L5</u>       |
| USPT,PGPB      | ((435/114)!.CCLS. )                                    | 59               | <u>L4</u>       |
| USPT,PGPB      | l1 and corynebacter\$4                                 | 0                | <u>L3</u>       |
| USPT,PGPB      | l1 and Coryneform bacteria                             | 0                | <u>L2</u>       |
| USPT,PGPB      | arginine\$1 repressor\$1                               | 4                | <u>L1</u>       |

US-PAT-NO: 5198346  
DOCUMENT-IDENTIFIER: US 5198346 A

TITLE: Generation and selection of novel DNA-binding proteins and polypeptides

DATE-ISSUED: March 30, 1993

INVENTOR-INFORMATION:

| NAME               | CITY       | STATE | ZIP CODE | COUNTRY |
|--------------------|------------|-------|----------|---------|
| Ladner; Robert C.  | Ijamsville | MD    | N/A      | N/A     |
| Guterman; Sonia K. | Belmont    | MA    | N/A      | N/A     |
| Kent; Rachel B.    | Boxborough | MA    | N/A      | N/A     |
| Ley; Arthur C.     | Newton     | MA    | N/A      | N/A     |

US-CL-CURRENT: 435/69.1; 435/252.3, 435/320.1, 435/489

[Full](#) [Title](#) [Citation](#) [Front](#) [Review](#) [Classification](#) [Date](#) [Reference](#) [KIMC](#) [Draw Desc](#) [Image](#)

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4. Document ID: US 5096815 A

L1: Entry 4 of 4

File: USPT

Mar 17, 1992

US-PAT-NO: 5096815

DOCUMENT-IDENTIFIER: US 5096815 A

TITLE: Generation and selection of novel DNA-binding proteins and polypeptides

DATE-ISSUED: March 17, 1992

INVENTOR-INFORMATION:

| NAME               | CITY       | STATE | ZIP CODE | COUNTRY |
|--------------------|------------|-------|----------|---------|
| Ladner; Robert C.  | Ijamsville | MD    | N/A      | N/A     |
| Guterman; Sonia K. | Belmont    | MA    | N/A      | N/A     |
| Kent; Rachel B.    | Wilmington | MA    | N/A      | N/A     |
| Ley; Arthur C.     | Newton     | MA    | N/A      | N/A     |

US-CL-CURRENT: 435/69.1; 435/252.3, 435/320.1

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| arginine\$1 repressor\$1 | 4         |

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L1: Entry 1 of 4

File: USPT

Oct 3, 2000

US-PAT-NO: 6127606

DOCUMENT-IDENTIFIER: US 6127606 A

TITLE: Method of using transactivation proteins to control expression in transgenic plants

DATE-ISSUED: October 3, 2000

## INVENTOR-INFORMATION:

| NAME             | CITY       | STATE | ZIP CODE | COUNTRY |
|------------------|------------|-------|----------|---------|
| Bennett; Malcolm | Coventry   | N/A   | N/A      | GBX     |
| May; Sean        | Earlsdon   | N/A   | N/A      | GBX     |
| Ramsay; Nicola   | Bishopston | N/A   | N/A      | GBX     |

US-CL-CURRENT: 800/298; 435/320.1, 435/419, 435/468, 536/23.6, 536/23.7, 536/24.1,  
800/278, 800/295

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| <a href="#">Full</a> | <a href="#">Title</a> | <a href="#">Citation</a> | <a href="#">Front</a> | <a href="#">Review</a> | <a href="#">Classification</a> | <a href="#">Date</a> | <a href="#">Reference</a> | <a href="#">Claims</a> | <a href="#">KMC</a> | <a href="#">Draw Desc</a> | <a href="#">Image</a> |
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 **2. Document ID: US 5867402 A**

L1: Entry 2 of 4

File: USPT

Feb 2, 1999

US-PAT-NO: 5867402

DOCUMENT-IDENTIFIER: US 5867402 A

TITLE: Computational analysis of nucleic acid information defines binding sites

DATE-ISSUED: February 2, 1999

## INVENTOR-INFORMATION:

| NAME                 | CITY      | STATE | ZIP CODE | COUNTRY |
|----------------------|-----------|-------|----------|---------|
| Schneider; Thomas D. | Frederick | MD    | N/A      | N/A     |
| Rogan; Peter K.      | Lebanon   | PA    | N/A      | N/A     |

US-CL-CURRENT: 702/20; 703/2

|                      |                       |                          |                       |                        |                                |                      |                           |                     |                           |                       |
|----------------------|-----------------------|--------------------------|-----------------------|------------------------|--------------------------------|----------------------|---------------------------|---------------------|---------------------------|-----------------------|
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|----------------------|-----------------------|--------------------------|-----------------------|------------------------|--------------------------------|----------------------|---------------------------|---------------------|---------------------------|-----------------------|

 **3. Document ID: US 5198346 A**

L1: Entry 3 of 4

File: USPT

Mar 30, 1993

**Generate Collection****Search Results - Record(s) 1 through 3 of 3 returned.** **1. Document ID: US 6127606 A**

L15: Entry 1 of 3

File: USPT

Oct 3, 2000

US-PAT-NO: 6127606

DOCUMENT-IDENTIFIER: US 6127606 A

TITLE: Method of using transactivation proteins to control expression in transgenic plants

DATE-ISSUED: October 3, 2000

## INVENTOR-INFORMATION:

| NAME             | CITY       | STATE | ZIP CODE | COUNTRY |
|------------------|------------|-------|----------|---------|
| Bennett; Malcolm | Coventry   | N/A   | N/A      | GBX     |
| May; Sean        | Earlsdon   | N/A   | N/A      | GBX     |
| Ramsay; Nicola   | Bishopston | N/A   | N/A      | GBX     |

US-CL-CURRENT: 800/298; 435/320.1, 435/419, 435/468, 536/23.6, 536/23.7, 536/24.1,  
800/278, 800/295**[Full](#) [Title](#) [Citation](#) [Front](#) [Review](#) [Classification](#) [Date](#) [Reference](#) [KMC](#) [Drawn Desc](#) [Image](#)** **2. Document ID: US 5198346 A**

L15: Entry 2 of 3

File: USPT

Mar 30, 1993

US-PAT-NO: 5198346

DOCUMENT-IDENTIFIER: US 5198346 A

TITLE: Generation and selection of novel DNA-binding proteins and polypeptides

DATE-ISSUED: March 30, 1993

## INVENTOR-INFORMATION:

| NAME               | CITY       | STATE | ZIP CODE | COUNTRY |
|--------------------|------------|-------|----------|---------|
| Ladner; Robert C.  | Ijamsville | MD    | N/A      | N/A     |
| Guterman; Sonia K. | Belmont    | MA    | N/A      | N/A     |
| Kent; Rachel B.    | Boxborough | MA    | N/A      | N/A     |
| Ley; Arthur C.     | Newton     | MA    | N/A      | N/A     |

US-CL-CURRENT: 435/69.1; 435/252.3, 435/320.1, 435/489**[Full](#) [Title](#) [Citation](#) [Front](#) [Review](#) [Classification](#) [Date](#) [Reference](#) [KMC](#) [Drawn Desc](#) [Image](#)** **3. Document ID: US 5096815 A**

L15: Entry 3 of 3

File: USPT

Mar 17, 1992

US-PAT-NO: 5096815

DOCUMENT-IDENTIFIER: US 5096815 A

TITLE: Generation and selection of novel DNA-binding proteins and polypeptides

DATE-ISSUED: March 17, 1992

INVENTOR-INFORMATION:

| NAME               | CITY       | STATE | ZIP CODE | COUNTRY |
|--------------------|------------|-------|----------|---------|
| Ladner; Robert C.  | Ijamsville | MD    | N/A      | N/A     |
| Guterman; Sonia K. | Belmont    | MA    | N/A      | N/A     |
| Kent; Rachel B.    | Wilmington | MA    | N/A      | N/A     |
| Ley; Arthur C.     | Newton     | MA    | N/A      | N/A     |

US-CL-CURRENT: 435/69.1; 435/252.3, 435/320.1

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